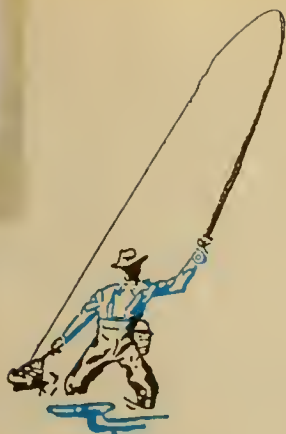


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# **FISHING LOG NEWSLETTER**

**ANNUAL EDITION  
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## REGION ONE - KALISPELL

The drought that hammered most of the state did not hit Region 1 as hard. Smaller streams dropped about one-third but most fisheries did okay. About half our streams are heavily influenced by seven hydroelectric dams and flows downstream from those dams were actually at or above normal flows as the dams met power demands. So most of our fisheries fared okay this summer. Drought tends to hit young fish the hardest so, interestingly enough, the major effects will show up several years from now when this year's young fish don't show up in the fishery.

Bull trout continue to improve in northwest Montana. Bull trout redd (spawning bed) counts in the Flathead drainage were about two-thirds of the goal of 1980s levels which is about double the low point in the mid-90s. Improvements are probably due to a combination of conservative fishing regulations (actually, no fishing), reduced numbers of lake trout in the Flathead, and improved stream flows after the 1988-92 drought. The Swan redd counts were down slightly but the count of over 500 redds is still one of the strongest in the western U.S. The Kootenai population continues to explode and the Wigwam River (a British Columbia tributary) had more than 1,000 redds by itself. The Hungry Horse (South Fork Flathead) population remains strong and stable so FWP has proposed a limited bull trout fishery. Montana adopted a Bull Trout Restoration Plan this year that calls for a return to fishable populations. The Hungry Horse fishery seems to meet the criteria so FWP is in consultation with the U.S. Fish and Wildlife Service which has jurisdiction over bull trout which are listed as threatened under the Endangered Species Act.

In other interesting news, a number of bull trout had radio tags surgically implanted so biologists could follow their daily movements. The surveys have yielded some surprising results. One bull tagged downstream from Libby Dam moved further downstream over Kootenai Falls, then back up over the Falls and into a spawning tributary. Kootenai Falls is a formidable obstacle and it has long been debated whether it is a complete barrier. Now it appears fish can pass over it which links the two lower sections of the Kootenai. A 32" bull trout tagged in the

Wigwam River moved downstream through Lake Kootenai and through Libby Dam and then into a lower tributary. That big fish really beat the odds on turbines spinning at 3,200 RPM. Several bull trout were also radio tagged in the Bull River, a Clark Fork tributary. Several radio tags were eventually found on gravel bars with no evidence of a fish carcass. One enterprising fish apparently moved into a housing subdivision for several days before the tag quit. Hmm.

Kokanee anglers had a great summer. Larger than usual (14"-17") kokanee showed up in the Thompson lakes, Lake Mary Ronan, Little Bitterroot, Foys, and Swan lakes. Biologists are at a loss to explain the outsize fish but anglers were delighted. Interestingly, night fishing is the hot new trend.

One state record was broken this year in R-1. In 1999, an angler caught a 6.34 pound smallmouth bass in the Flathead River downstream from Kerr Dam. In April, 2000 an angler caught a 6.40 pound smallie to edge out the old record. The angler was able to have the fish weighed live and released it back to the river. Interestingly, this record was tied by a Fort Peck Reservoir angler in September, 2000.

Illegal fish introductions continue to plague the state. Brown trout were recently found in a private pond near Kalispell. That is the fourth population found in the upper Flathead and Kootenai drainages which could cause real problems for bull trout. Carpenter Lake was chemically rehabilitated several years ago to remove stunted bluegills and trout fishing has been great since then. Now bluegills and largemouth bass have reappeared and smallmouth bass have appeared which is a new species so we know we didn't just miss some fish in the eradication. Someone sabotaged the effort. Walleyes have appeared in Milltown Reservoir to add to its woes. Bluegills are now appearing in Canyon Ferry Reservoir to further stir that pot. Nearly three dozen other illegal plans have appeared statewide including yellow perch, shiners, suckers, and northern pike. The bucket biologists are ruining your fisheries.

### **COMPLETION OF THE FLATHEAD FISHERIES CO-MANAGEMENT PLAN AND CURRENT STATUS OF THE FLATHEAD BULL TROUT POPULATION**

After a 16-month agency and public process, Fish Wildlife and Parks (FWP) and the Confederated Salish and Kootenai Tribes (CSKT) have written the Fisheries Co-Management Plan for Flathead Lake and the upper Flathead River. The plan includes direction from a citizen advisory committee and extensive public comment. The summary of public comment and the response to the comments are included in the appendix of the plan. The plan also includes direction from the Flathead Reservation Fish and Wildlife Board.

The plan seeks to increase bull trout and westslope cutthroat trout to at least secure levels, while maintaining a viable recreational fishery. Five major strategies will be used to accomplish the objectives outlined in the plan. These are (1) fisheries assessment monitoring and

## MONTANA REGIONAL UPDATES

research; (2) water quality and aquatic habitat; (3) conservation education and enforcement; (4) lake and river access; and (5) fish population management. CSKT and FWP will implement a combination of strategies. Key tasks will include increasing the quality and number of access sites on the lake and river, and establishing community education efforts such as a lake honoring day.

Initially, recreational angling will be the major tool used to control non-native fish populations to benefit native trout in Flathead Lake and the upper river. In Flathead Lake, control will focus on lake trout and lake whitefish. Anglers will be encouraged to keep small lake trout to eat or for use in community kitchens and food banks. If this initial recreational fishing strategy does not achieve the goal of secure native trout populations, additional angling incentives will be established. These include increased work with community kitchens and food banks, and encouraging fishing derbies to harvest large numbers of small lake trout. If these additional strategies are not successful, more aggressive techniques such as commercial angling, bounties, and netting may be used. In general, there was little public support for these more aggressive strategies, and they would be used only if native trout dropped to dangerously low levels. The Plan relies on information gained through biological monitoring indices to assess the status of fish populations and direct appropriate management actions. These monitoring indices include angler creel surveys, lake netting, stream electrofishing population estimates, spawner counts, and measurements of stream habitat conditions.

How FWP and CSKT determine bull trout status is a good example of the agencies use of newly collected information. Crews net Flathead Lake to determine the relative abundance of bull trout subadults and adults, electrofish rearing streams to track the abundance of juvenile (1 to 3 year old) bull trout, and count redds, spawning nests, in tributary streams to measure the number of successful bull trout spawners migrating upstream from Flathead Lake. The results of recently completed surveys in Flathead Basin tributaries point to continued improvement in the bull trout population. For example, the Fall 2000 count of 251 bull trout redds in the eight North and Middle Fork tributaries is 17 percent higher than last year's count (215) and the highest in nine years. This year's count marks the fourth straight year of increasing counts.

Biologists point out that the higher counts relate to better survival conditions for this group of adult bull trout in the river system and in Flathead Lake. The higher survival may be related to (1) better stream flows after the drought years of the late 1980s, (2) improved habitat conditions, (3) no-fishing regulations for bull trout, coupled with increased education and enforcement, (4) liberal fishing limits on lake trout, a nonnative fish which competes with bull trout, and (5) generally more favorable conditions for bull trout in Flathead Lake. The increased redd count coupled with the stable numbers of young fish found in tributaries this year add up to a definite improvement in the bull trout population.



## REGION TWO - MISSOULA

### BITTERROOT DRAINAGE

For the past 3 years we have been tracking westslope cutthroat and bull trout migration patterns using radio telemetry. In 1998 and 1999 we followed westslope cutthroat to their spawning grounds and in 2000 we followed 10 bull trout in the East Fork Bitterroot to their spawning grounds. The bull trout in 2000 were between 18 and 24" long and were tagged during the Spring between Conner and Sula. All of them eventually moved upstream into core areas to spawn. Due the fires, we were unable to follow 5 of them as they migrated into the Anaconda-Pintlar Wilderness. The other 5 spawned in core area tributary streams.

Speaking of the fires, the Bitterroot had considerable acreage burned this summer. In some isolated cases there were fishkills in small creeks. Due to the large acreage burned, there is potential for considerable erosion into area streams and if we experience severe thunderstorms on severely burned areas there is potential for landslides that could cause fishkills. However, overall the fires will likely have long term benefits to the fishery as we should see increases in large woody debris falling into streams. We will likely see some black water during spring runoff and rainstorms. However, the long term should bode well.

Fish populations in the mainstem Bitterroot River are looking good, as cutthroat populations continue to increase. Our 1999 estimates indicate that rainbow trout numbers are also high. We have detected whirling disease at two sites, one near Darby and one near Stevensville. At both sites, one fish was infected out of a large group and the infection was light.

### ROCK CREEK (GARRISON) INSTREAM FLOW AND HABITAT IMPROVEMENT PROJECT

We converted a flood irrigated pasture to center pivot irrigation systems to salvage water for instream flow (5-

## **MONTANA REGIONAL UPDATES**

27cfs). We restored 4 meanders, created 46 new pools, and installed 16 new overhead cover areas. The project reconnects Rock Creek with the Clark Fork River and provides spawning habitat for brown trout.

### **TROUT CREEK HABITAT IMPROVEMENT PROJECT**

Trout Creek was channelized approximately 35 years ago. We are returning approximately 3 miles of Trout Creek to its original channel. The project will address stream stability, sediment and nutrient inputs and grazing management as well as create new fisheries habitat. Trout Creek is a tributary to Flint Creek near Philipsburg.

### **LOST CREEK WATERSHED PROJECT**

We are developing off-site water for a concentrated feeding area on Lost Creek. This project will supply 1700 head of cattle with off-site water and remove Lost Creek as their year-round watering source. The ranch management plan will include riparian grazing management to reduce overgrazing of riparian areas.

Approximately 15 years ago a headgate washed out capturing all of Lost Creek's flow. We will rebuild the headgate and return Lost Creek to its original channel. Habitat improvement, bank stabilization structures and revegetation efforts will be installed prior to reconnecting Lost Creek to the Clark Fork River.



### **UPPER WILLOW CREEK HABITAT IMPROVEMENT PROJECT**

Upper Willow Creek was channelized and willows were removed. The current channel is both laterally and vertically unstable. The project will relocate Upper Willow Creek to a new location and construct an entirely new channel and flood plain. Upper Willow Creek is a tributary to Rock Creek (Clinton) and contains bull trout and westslope cutthroat trout.

### **ROCK CREEK (CLINTON) HABITAT IMPROVEMENT PROJECT**

We are stabilizing and increasing habitat on two reaches of Rock Creek. The project includes installing log and rock weirs to stabilize banks while improving fisheries habitat. These projects are reducing the need for riprap as bank stabilization on Rock Creek.

## **REGION THREE - BOZEMAN**

### **FLEDGLING WATERSHED GROUP TACKLES DROUGHT CONDITIONS ON THE UPPER JEFFERSON RIVER**

The Jefferson River Watershed Council is comprised of a handful of residents in the Jefferson River Valley that began meeting during the late summer of 1999. Within a matter of a few months and about 10 meetings attended by a cross-section of the valley residents representing agriculture, angling, landowners, and state and local government the group was able to develop a plan intended prevent the complete dewatering of the upper 25 miles of the Jefferson River during years with water shortages.

The efforts of these folks made a significant difference in keeping water flowing in the Jefferson River this year. When the meetings first began, no one could have anticipated that southwest Montana was entering the third driest water year on record for the Butte Weather Service recording station. The 1999-2000 water year tied with another notable water year for lack of precipitation - 1987-88.

Despite the challenge of such a severe year, anglers and water users showed remarkable tolerance for each others predicament. There were several days when the river was in very tough shape with low flow and high water temperatures, and the fishing was closed for over 6 weeks. Anglers obviously understood the severity of the situation and very few people complained about the fishing closure. There were also times when irrigated ground was being stressed by heat, wind and too little water. Despite the severe shortage of water, the major irrigation ditches made good on a commitment to maintain some flow past their diversions. At summer's end, there were only 7 days when the river dipped below the target flow of 50 cfs for the entire day at the Waterloo gaging station. This result was a significant improvement over 1988 when some reaches of the river were essentially dry for several weeks. Dave Amman of the DNRC water measurement program did a great job of measuring flows at various locations in the river and on major canals throughout the summer. This

flow information provided the basis for productive discussions between water users and fishery advocates.

Sampling of the Jefferson River fishery next spring will likely find reduced numbers of fish compared to population estimates conducted prior to this extreme drought year. Fish loss during the drought of 2000, however, would have been much more severe without the efforts of the Jefferson Watershed Council and the help of water users throughout the upper Jefferson.

### **CLIFF LAKE: A QUANDARY IN MADISON-GALLATIN DRAINAGES**

Fisheries management issues rarely run short in the Madison and Gallatin River drainages, with abundant blue ribbon trout rivers, lakes, and reservoirs. One could wax *ad nauseam* on the threats of hyper-development, ravages of whirling disease, or withering drought conditions. In spite of all this gloom and despair, fishing and fish populations have been...well, pretty darn good, as usual. Rather than a drama, perhaps a mystery would bring more interest to these pages.

Cliff Lake is a closed basin lake with two inlets and no outlet tucked in a narrow canyon in a chain of lakes linking the Centennial and Madison valleys. Since the mid-1950's Cliff Lake has provided biologists with no small measure of mystery. The Cliff Lake fishery has boomed and busted, as if some great belch from the bowels of the earth vexed its gin-clear waters. Cliff Lake's history boasts a 20-pound rainbow trout that reigned as state record from 1952 to 1989. In spite of the record, anglers have complained of emaciated rainbow trout as far back as 1958. Jack Bailey, in charge of fish health for Fish and Game in the 1950's, documented extensive parasite loads and consequent bacterial infections as early suspects. A graduate study by Alfred Fox in 1961 confirmed that parasite loads were high, and included a variety of parasitic worms. The 1959 earthquake further complicated the mystery by suddenly eliminating nearly all aquatic vegetation in the lake for a time. By 1963 it was apparent that continued stocking of hatchery rainbow trout was only producing more emaciated fish and was discontinued until 1969. Rainbow trout of the 1969 plant were quickly parasitized and stocking ceased for the long term.

In the words of Art Whitney, Fisheries Division Administrator, in a letter dated February 24, 1976 to a pesky Senator Hazelbaker, "We have not recommended that the lake be put back into the stocking program because we feel it does not constitute a wise use of sportsmen's dollars...I am sorry we do not know of any practical solution to the problem of Cliff Lake."

Oddly, a June 1976 survey yielded surprising results. Gill nets captured an average of 9 rainbow per net, averaging a respectable foot long, up to 17.8 inches. This compared favorably to Hebgen and Harrison Reservoirs at the time. Ample wild reproduction in Antelope and Horn creeks was supporting a strong population, with decent growth and condition. Apparently, fishing on Cliff Lake was on the upswing. Optimism spilled in to the 1980's and projects to

further enhance the fishery were implemented. A spawning survey on Horn and Antelope creeks indicated an annual production of nearly 100,000 wild rainbow trout. Spawning habitat was further enhanced on Horn Creek in a cooperative project between Fish, Wildlife, and Parks and the Cliff Lakes Resort. Finally, an experimental plant of Bear Lake cutthroat trout, a predator, was attempted to take advantage of abundant suckers and illegally-introduced lake chub.

In spite of these efforts the 1990's saw a decline of numbers and health of Cliff Lake rainbows and an absence of cutthroat trout. The 1991 catch per net averaged 7.7 rainbows with a mean length of 12.4 inches, which declined to a low of 1.8 per net in 1994. By 1998, catch rates had recovered, but average length dropped to 8.9 inches. Surveys of spawning tributaries revealed abundant production of young fish. Apparently, the specter of parasite loads continues to hold Cliff Lake back from its former record-producing glory.

Mystery solved? The prime suspects are obviously the parasitic worms that pervade the rainbow trout population, but there are too many unknowns yet to bring them to trial. For instance: why are the rainbow and brown trout flourishing in Wade Lake, less than a mile below Cliff Lake as the whiskeyjack flies? What is it in the water chemistry or biota of Cliff Lake that limits growth and propagates parasites but allows Wade Lake to produce abundantly large trout? Which intermediate host is lacking in Wade Lake but loaded in Cliff Lake: snails, crustaceans, or birds? Why did the vegetation disappear after the earthquake? Does the aquatic vegetation regulate parasite abundance? Can anything be done to limit parasites?

Obviously, too many questions remain unanswered to come up with any simple solutions. Biologists have struggled with the mystery for half a century, but with persistent research, dogged determination, and new technology, we may uncover new clues to the mystery of Cliff Lake. Until then anglers can expect to catch decent numbers of moderate-sized rainbow trout on a gorgeous, crystal clear lake, with bald eagles soaring past deer, moose, elk and bear wandering the hillsides. Until then, the state record rainbow trout of the Kootenai will reign.

### **ARCTIC GRAYLING RECOVERY PROGRAM**

Restoration efforts for fluvial or stream dwelling Arctic grayling continued to progress in 2000. Recovery efforts continued on the upper Ruby River (4<sup>th</sup> year), lower Beaverhead River (2<sup>nd</sup> year) and North and South Forks of the Sun River (2<sup>nd</sup> year). In addition the initial efforts began in the Missouri Headwaters with yearling grayling planted in the lower Gallatin, lower Madison, lower Jefferson and mainstem Missouri near Three Forks. In total, over 58,000 yearling grayling were planted in the four recovery effort sites. These grayling are progeny of the fluvial broodstock developed from the Big Hole River grayling, spawned each spring, and with the resulting juvenile grayling reared at Big Springs State hatchery in Lewistown.

These recovery efforts make up the initial short-term recovery goal of four restoration efforts in progress by 2001, on the way to the long-term recovery goal of five populations in three drainages within the historic range by 2020.

Results of restoration efforts have thus far been encouraging with survival of planted grayling documented in all four recovery efforts and the first natural reproduction documented in the Ruby River from the spring 2000 spawn. Additional plants will be made in summer 2001 to establish multiple year classes and facilitate natural reproduction.



The Big Hole River experienced severe drought conditions in summer 2000. The Drought Management Plan and Flow Enhancement Program were key to mitigating low instream flows. Montana Fish, Wildlife and Parks worked closely with the Big Hole Watershed Committee, local waterusers and sportspersons to initiate these programs. In the upper Big Hole River 16 wells and 2 spring developments were instrumental as alternative stockwater sources used to maintain instream flows rather than diverting water from the Big Hole River. To further protect fisheries during low flow and high temperature regimes, angling closures were placed on portions of the river from June 29 to October 10, 2000. Effects of drought conditions on the Arctic grayling, other native species and trout populations will begin in spring 2001.

### **MADISON RIVER DRAINAGE PROJECT 2188 PROTECTION, MITIGATION, & ENHANCEMENT**

In anticipation of receiving the FERC license to operate the Madison/Missouri hydroelectric system (Project 2188), PPL Montana implemented the program agreed upon with the agencies for protection, mitigation, and enhancement of

fish, wildlife, and recreation resources. In the Madison Drainage, first year tasks included hiring a permanent fisheries technician, relocating the office, purchasing remote radio telemetry equipment, conducting a year long creel census on Hebgen Reservoir, and initiating development of a program to restore streamflow to Madison River tributaries. The FERC license was issued to PPL Montana in October. PPL Montana, the state agencies, and the Madison-Gallatin Coalition have all submitted requests to FERC to modify the license.

### **CHERRY CREEK NATIVE FISH INTRODUCTION PROGRAM**

The Cherry Creek Native Fish Introduction Program was delayed in October 1999 when an appeal was filed against Montana Department of Environmental Quality permits received by FWP. The Montana Board of Environmental Review received and reviewed numerous brief and filings on the legality of the permits for the project. In September the BER dismissed the appeal, but granted the appellant's request for a stay to elevate the issue to district court. The appellants' deadline for filing in district court is November first.

### **CITIZEN'S GROUPS DEVELOPING RECREATIONAL MANAGEMENT PLANS FOR BEAVERHEAD AND BIG HOLE RIVERS**

Anyone who fishes the famous wild trout rivers of Montana should be interested in a process that has been ongoing for the last year and a half in SW Montana...

In the 1999 Montana Legislature, several bills were introduced dealing with river crowding, the end result of which gave FWP new authority to regulate river recreation for reasons other than safety, as well as provided impetus for preparation of community driven recreation plans for the Beaverhead and Big Hole Rivers. At the time of this printing, two plans (one each) have been proposed by Citizens Advisory Committees and are open for public comment until Nov. 13, 2000. The FWP Commission is scheduled to decide on if, how, and when to implement the proposals at its December 2000 meeting. Copies of the proposals as well as associated news releases and updates can be seen at FWP's website: <http://fwp.state.mt.us> and clicking on the "what's new" and/or "news" buttons.

### **YELLOWSTONE RIVER**

Trout abundance in the upper Yellowstone river was excellent in all sections sampled this spring. Healthy fish populations and relatively low flows combined for excellent fishing until water temperatures began to rise significantly in late summer.

Low flows due to summer drought in most of the tributary drainages of the upper Yellowstone river raise concerns about fish survival. Low stream volumes in particular threaten high winter mortality. However, water conditions in early fall have improved somewhat as the irrigation season ends and water temperatures cool. Favorable weather may still help avoid serious consequences for fish.

## REGION FOUR – GREAT FALLS

### DROUGHT OF 2000

Probably the biggest news in north-central Montana from a fish's viewpoint was the severe drought this past summer. Snowpack and springtime precipitation was so poor that in many rivers and streams (including the Missouri, Dearborn and several others) there simply was no spring runoff. Water levels in reservoirs and ponds became so low that stocking was reduced or canceled for the year on approximately 20 of these waters in north-central Montana.

Rivers were especially hard hit by the drought. The Smith River was a trickle at Eden Bridge and the entire lower 25 miles of the river were bone dry by the end of August, with fish kills observed. Flows on the Dearborn River and Little Prickly Pear Creek (critical Missouri River trout spawning tributaries) were the lowest on record. Nearly 200 miles of the Teton River was dry by late summer and middle portions of the Sun River were dry or nearly so in early August.

Low flow conditions and hot weather conspired to raise water temperatures to levels that are lethal for trout (or nearly so) in portions of several rivers in our area. Water temperature reached an astonishing 83 degrees on the Dearborn on August 1 and got as high as 78-79 degrees on the Smith and Sun rivers. Even the Missouri River below Holter got quite warm, which was a surprise to many anglers who thought this tailwater was always blessed with cool water withdrawn from the deeper parts of the reservoir. Afternoon temperatures in the Missouri typically exceeded 70 degrees for a number of days in August. Biologists typically consider water temperatures above 70 to be stressful to trout, particularly when caught and released.

In response to low flows and high water temperatures, fishing closures were placed on the Smith and Missouri rivers to protect stressed trout populations. The entire 125-mile length of the Smith River was closed on August 17. A 31-mile section of the Smith was re-opened to catch and release fishing on September 13 but the entire river was not re-opened to normal fishing regulations until flows reached minimum targets in mid-October. An afternoon fishing closure was enacted beginning on August 17 on a popular 35-mile stretch of the Missouri below Holter Dam. The river was closed to fishing between noon and midnight to reduce the effects of catch and release handling of trout during the warmest time of the day. Though the Missouri was not as low and warm as some other closed rivers, biologists felt the closure was necessary since the river rainbow trout population is suffering from an expanding whirling disease infection. In addition, closures on many other blue ribbon Montana trout streams were sure to shift a substantial amount of fishing pressure onto the Missouri. The Missouri closure was lifted shortly after Labor Day.

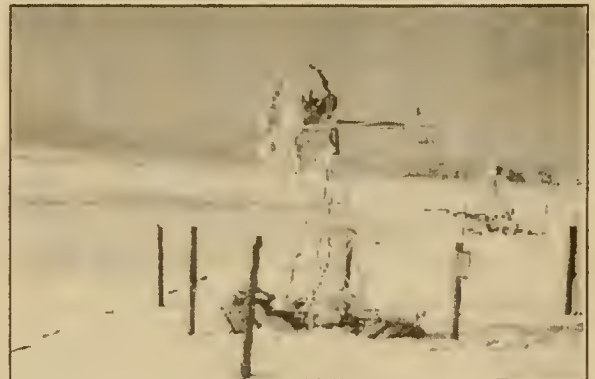
### BYNUM RESERVOIR AERATION

The drought of the past few years and particularly during 2000 has created problems for a number of fisheries in Region Four. Bynum Reservoir (north of Choteau along the Rocky Mountain Front) has been hit extremely hard as water levels have been reduced to dead storage. Bynum has been managed as a walleye/yellow perch fishery since 1985. This reservoir covers approximately 3500 acres at normal full pool and has a maximum depth of 39 feet. Water is diverted into the reservoir from the Teton River and is stored for irrigation.

Due to drought conditions and irrigation demand, total water surface has been reduced to roughly 500 acres. The reservoir is essentially divided into two ponds, connected by a shallow channel that will more than likely freeze solid during the winter. The pond nearest the dam covers approximately 50-75 acres and has a maximum depth of 8.5 feet while the other pond covers the remaining surface acres but has a maximum depth of only 4.5 feet.

Fisheries surveys conducted in late August revealed healthy walleye populations exist in both areas of the reservoir. Several year classes of spawning adults are present along with young-of-the-year, yearling and two-year old fish. In addition, forage fish such as yellow perch and spottail shiner occur throughout the reservoir.

A potential winterkill may occur in Bynum Reservoir during the winter of 2000-2001 due to reduced water levels and abundant aquatic vegetation that will die and decay under the ice. Attempts are being undertaken to minimize the winterkill situation in this popular walleye fishery. Four windmills have been placed on the shoreline and as the wind blows, air is pumped into the bottom of the lake which bubbles up to the surface, keeping a hole open in the ice. This allows harmful gases to escape and maintain safe oxygen levels to keep fish alive.



Two windmills were purchased with funds from the Great Falls Chapter of Walleye Unlimited and club members assisted in their installation. The other two windmills were obtained with money from the Governors Environmental Contingency Grant Program which aids entities affected with natural resource disasters such as drought.

Oxygen levels will be monitored throughout the winter at Bynum Reservoir and windmills will be maintained to

make sure that they are operating properly. Hopefully the windmills will make a difference in bringing fish through the winter. The long-term solution to maintaining a fishery in this reservoir is adequate water levels, that will only occur if sufficient snow pack or spring rains produce runoff that can be diverted into the system. The reservoir was closed to all fishing until further notice beginning on October 3 to protect the remaining fish population and avoid dangers to ice anglers of thin ice caused by aeration.

### **SAUGER STATUS IN THE MIDDLE MISSOURI RIVER**

The sauger is a popular native game fish found in Montana's larger warmwater rivers. One of the first written accounts about sauger was from Meriwether Lewis in 1805 while camped on the banks of the Missouri and Marias rivers. Lewis wrote .... "Goodrich who is remarkably fond of fishing caught several dozen fish of two different species - one ...in form and fins resemble the white chub common to the Potomac; this fish has a smaller head than the Chubb; ... a rim of (teeth) garnish the outer edge of both the upper and lower jaw; the tongue and pallet are also beset with long sharp teeth bending inwards; the eye moderately large, the purple dark and iris which is narrow is of a yellowish brown colour .... ".

When Montana Fish Wildlife and Parks began fisheries survey work in 1976 on the Middle Missouri River sauger populations were healthy. However a severe decline in sauger numbers was first noticed beginning in 1989. Populations have remained very low through 1997, especially in the reach between Great Falls and the Judith River confluence. The drought conditions in the late 1980's and early 1990's are thought to have been the reason for the decline. During the period 1985-1994, the average spring/summer flow of about 10,000 cubic feet per second (cfs) was exceeded only 3 years out of the 10 years. Sauger fingerlings depend on normal summer flows for maintaining adequate nursery habitat in side channels and backwater areas. Apparently, there was inadequate recruitment of juvenile sauger during the several low water years, consequently the populations declined.

Flows did improve in recent years and gradually sauger numbers have been increasing. Recent fall electrofish surveys have shown that sauger numbers are pretty much back to normal in the lower 100 miles of this 200-mile reach, but sauger population levels remain far below normal in the upper 100-mile reach between Great Falls and Judith River. Sauger fishing regulations were changed to better reflect the condition of the present populations and help conserve their numbers. The creel limit was reduced from a 5 sauger daily limit to a 1 sauger daily limit in the upper 100-mile reach. Additionally, an experimental stocking program was initiated during 1998. Only during 1999 was the spawning and egg collection of sauger in the wild successful. A total of 5,000 sauger fingerlings were stocked in Morony Reservoir. It is anticipated that some of these sauger will eventually drift out of Morony and reside in this upper portion of the Missouri River.

Both in 1999 and 2000 spring/summer Missouri River

flows have been very much below normal. It is thought that sauger recruitment for these years will, unfortunately, be inadequate for maintaining the populations at normal carrying capacity. Because of the recent widespread declines in sauger populations throughout Montana, the director of FWP approved designation of sauger as a Species of Special Concern. This designation recognizes that sauger are more vulnerable to relatively minor disturbances to its habitat and deserves careful monitoring of its status.

### **BREWERY FLATS STREAM RESTORATION**

After nearly 5 years of planning, a meandering stream channel is now a reality at the Brewery Flats FAS, on Big Spring Creek, near Lewistown. The channel was restored from a straight 2500 foot rock lined ditch to a 3900 foot channel with riffle, pool and flood plain characteristics. Big Spring Creek is a blue ribbon trout stream and the premier fishery in the Lewistown area. Recreation and educational activities have already increased at the site. The project has increased channel length by over 50%, slowed water velocities and created deep pools, so it is anticipated that total trout numbers and biomass will increase. Trout populations have been evaluated in the old channel at Brewery Flats since 1995, so changes in trout numbers can be well documented in the future.

The channel at Brewery Flats was straightened in 1907 to make space for a railroad switching yard and was an industrial area for decades. During the past century, Big Spring Creek at Brewery Flats has been a fast flowing ditch immediately adjacent to the county road. Construction of the new channel began in 1998, but was halted a month later when gravel predicted by preliminary surveys was not found. In 1999, a total of 5000 cubic yards of gravel was brought into the site to supply 1.5 feet of gravel to line the new streambed. Natural gravel was found about 1.5 feet under the current channel elevation. The added gravel will increase channel stability and provide additional spawning habitat in Big Spring Creek. To further increase channel stability, about 3000 willow cuttings were planted, erosion control fabric was installed along the stream banks, and native seeds were spread. Plants grew for one year before Big Spring Creek was transferred to the new channel over a three day period this September.

The Brewery Flats project has been a model of community cooperation. Private citizens, educators, civic groups, and government agencies have rallied around the project and have formed a committee that meets regularly to assist in planning and development of the area. This group has obtained easements and funds to construct one mile of trail adjacent to the new channel. The trail has been heavily used since its construction last year. The committee is currently focusing on revitalizing abandoned industrial sites adjacent to the Fishing Access Site. Interpretive signs adjacent to the new trail are also planned. The Lewistown Junior High has received national grants and recognition for work in the Brewery Flats area and educators often focus on the area for environmental education. The Society of American

Foresters has planted 300 trees in the area and installed several benches. A grade school has also raised funds for improvements.

By the time the project is completed next fall, Montana Fish, Wildlife and Parks; the Natural Resources and Conservation Service; Fergus County; Montana Department of Transportation; Fergus County Conservation District; local groups; schools; the Montana Conservation Corps; and others will have contributed to this project. InterFluve, Incorporated of Bozeman provided the channel design and oversight during construction of the new channel. Work that still needs to be done includes some finishing touches to the new channel, filling in the old channel and construction of a new parking area. The project should be completed by fall 2001.



(note: photo shows new channel on left and old channelized section against the highway)

### HAUSER RESERVOIR

Oddly enough, Hauser probably benefitted from the drought of 2000. Low runoff during a drought year actually increases the retention time (time it takes to replace all the water in the 38,000 acre reservoir) and less fish are flushed. Hauser is finally showing signs of a rebound from the impacts of fish flushing losses that occurred from 1993 through 1997. Ongoing efforts to recover the kokanee salmon population continued with over 400,000 fry and 200,000 fingerlings planted; many by boat to avoid immediate predation from birds and fish. Recovery efforts will continue through 2004 thanks to the hatchery system who has been working overtime to harvest as many kokanee eggs from the wild as possible. Fall netting indicates that survival of these plants is better than in recent years. The only hitch is that walleye stomachs, in some cases, are full of these young salmon. A Hauser angler again broke the state record for kokanee in 2000 with a 6.07 pound salmon! This beat the record set last year in Hauser by 0.04 pounds.

Walleye populations remain above the long-term average

and are finally demonstrating good growth (thanks in part to the aforementioned kokanee plants). Liberal angler harvest regulations (10 walleye; one greater than 28 inches) remain in effect to reduce walleye densities however, recruitment appears to be directly linked to annual walleye production in upstream Canyon Ferry and the level of flushing that occurs out of this reservoir. In 1998 and 1999, Canyon Ferry walleye have produced relatively low numbers of fry which combined with low runoff has allowed densities to stabilize. This could change quickly with as the spawning population in Canyon Ferry grows.



### HOLTER RESERVOIR

Holter Reservoir continues to produce fantastic rainbow trout fishing. Fishing was exceptional this spring for big rainbows in the tailrace below Hauser dam. Most of these fish were Eagle Lake rainbows from the 1996 and 1997 plant in Holter. These fish averaged around three pounds in 1999 fall sampling and in the fall 2000 were reaching 24 inches and 4 ½ pounds. With the large number of these spawning aged fish in Holter, biologists are hopeful that natural reproduction will augment the hatchery fishery.

The walleye population in Holter remains in a state of flux after being inundated with Canyon Ferry walleye in 1997. Densities reached record highs in 1999 with 9.5 walleye per net while 2000 levels have returned to 4.5 per net which is still above the long-term average of 3.8. However, with increasing densities, average size has declined. Since 1990, the average size of walleye in fall nets has declined from approximately 21 inches to 15 inches this fall. Holter maintains a restrictive harvest regulation to protect the majority of spawning aged fish. The current regulation allows harvest of 5 fish under 20 inches and one greater than 28 inches; all fish between 20 and 28 inches must be released. Trophy walleye still exist in Holter, they are just not as abundant as in recent years.

The flashboards on Holter dam were recently replaced by the new owners of the dam, Pennsylvania Power and Light, Montana (PPLM). The power company initially stated that

in order to replace the flashboards, Holter reservoir would have to be drawn down 16 feet from full pool. Biologists felt strongly that this would be detrimental to this important reservoir fishery and also have possible negative impacts to the Missouri River fishery below Holter dam. It was finally agreed that bulkheads would be used in place of drawing the reservoir levels down. The work was completed successfully and the new boards should last another 25 years.

### **TIBER CISCO**

A special study funded by the US Bureau of Reclamation concerning the spawning habits of cisco (lake herring) during the winter of 1999/2000 in Tiber Reservoir was completed. Approximately 40 adult female cisco were equipped with sonic transmitters in the fall of 1999 and were tracked through the spawning season, which peaked in late November and early December. Cisco moved to shoreline areas during spawning season as expected, but no areas of obvious concentration were found. It appeared cisco spawned in shoreline areas throughout the reservoir, with no obvious preference for bottom type. They spawned on sand, mud, gravel, vegetation, and cobble bottoms and their eggs had good survival rates on all substrate types. Though the cisco didn't show much preference for bottom types, they did have definite depth preferences. Biologists waited for the reservoir to safely ice over, then went out on the ice and collected nearly 100 dredge samples from various depths in three different areas of the reservoir. As it turned out, 94% of the eggs collected were found in water less than 10 feet deep at time of spawning.

Information on the depth distribution of eggs is important from a reservoir management standpoint. In most winters, the reservoir water level dropped an average of 1.6 feet during the cisco egg incubation period (December through March). A 2-foot drawdown is probably acceptable except in some winters the drawdown was 4-8 feet, which could result in substantial loss of incubating cisco eggs. As a result of the study, MDFWP has recommended that winter drawdown not exceed 2 feet.

Another interesting aspect of the project was the estimation of total number of cisco eggs laid and the survival of the young fish. The fall of 1999 promised to be the first major spawning year for the fry initially stocked in spring 1997. We estimated egg production in two different ways: 1) using the average egg density in bottom samples, and 2) using sonar estimates of total adult cisco in the reservoir and factoring in number of eggs laid per adult female. The results of the two different approaches showed remarkable agreement. We estimated that somewhere in the neighborhood of 1-2 billion eggs were laid. Assuming at least 1/3 would survive to hatch, there should have been at least 500 million fry hatching in the spring of 2000. Since a good population of adult fish was established by stocking only 6 million fry in 1997, we were very anxious to see how many young fish appeared in nets, fish stomachs, and on sonar during the summer and fall of this year.

Unfortunately, we did not find nearly as many young of

year cisco this fall as we had hoped. Few were found in gill nets, trawl nets, or on sonar surveys. It is possible they were missed somehow and repeat surveys next year should confirm this. Studies on lakes in the midwest indicate cisco reproduction is often "boom and bust" hence it is possible we will have a boom year sometime soon when weather and water conditions are right.

### **MISSOURI RIVER WHIRLING DISEASE**

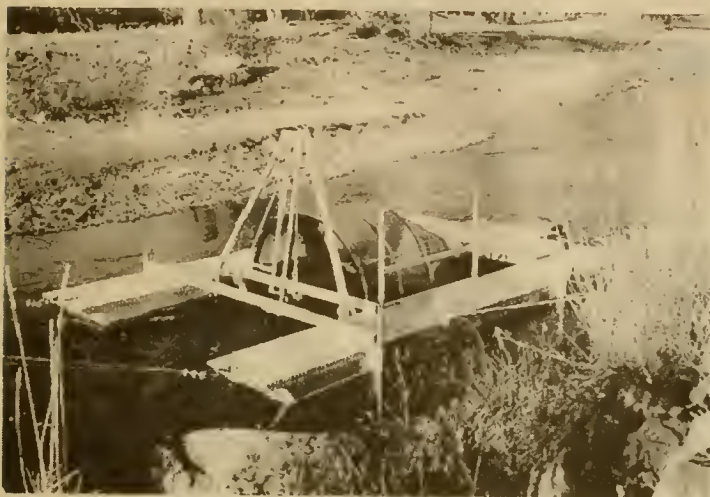
Biologists and anglers alike are anxiously watching the Missouri River below Holter Dam to learn what effects whirling disease will have on this nationally popular fishery. A substantial amount of research and monitoring is proceeding in the river and its key trout spawning tributaries. Results for 1999 (the most recent data available at this time) show some significant trends. Most noticeable in the river is that infection rates in the mainstem rose dramatically in 1999. The infection rate rose to a very high level in the "upper" river near Craig in 1999 while in the Pelican Point area (about 20 miles below the dam) the infection rose from a negligible level in 1998 to a moderate level in 1999.

There was better news on the key spawning tributaries. The Dearborn River (major rainbow spawning stream) and its two main tributaries continued to show no signs of the disease. The disease was not detected at two sites on Sheep Creek, even though it has been found at low levels there in the past. No infection was detected in Lyons Creek (tributary to Little Prickly Pear) though diseased fish have been found there in the past. Wolf Creek, another tributary to Little Prickly Pear, showed a very low infection, similar to the past. Little Prickly Pear Creek itself remained extremely heavily infected. Tagging studies on juvenile rainbows leaving Little Prickly Pear indicate it is the most important spawning and rearing area for rainbows that live in the upper 10 miles of the river near Craig.

Rotary screw fish traps have been operated on the Dearborn River and Little Prickly Pear Creek beginning in 1998 to determine the number, timing, age and size of juvenile trout migrating to the Missouri River from these critically important spawning streams. There were substantial differences among streams and years. An estimated 30,000 yearling rainbows (3-4") migrated from Little Prickly Pear in 1998 compared to only 7,000 in 1999. On the other hand, only about 13,000 young-of-year rainbows (1-2") migrated in 1998 compared to 44,000 in 1999. Unfortunately, lab tests on the young-of-year fish showed them to be heavily infected with whirling disease and not most were expected to survive. The decline of yearlings, which are more resistant due to their larger size, is probably a direct result of rapidly rising infection rate in 1997 and 1998.

A substantial number of brown trout spawn in Little Prickly Pear while few browns spawn in the Dearborn. Brown trout life history appears to be different from rainbows in this area. In both years, 90-95% of the juvenile browns migrated to the river from Little Prickly Pear as young-of-the-year fish. Also, the number of

young-of-year browns rose dramatically from 18,000 in 1998 to 92,000 in 1999. We do not yet know if this is a response to reduced rainbow numbers or was caused by a change in spawning or rearing environment.



Screw Trap on Little Prickly Pear Creek

Fish trap results for rainbows in the Dearborn were more promising. It appears that most of the young rainbows in the Dearborn stay there through their first winter and migrate to the Missouri the following spring at lengths of 3-4 inches. Yearling production from the Dearborn was fairly consistent in 1998 and 1999, ranging from 85,000 – 106,000 fish. Young-of-year rainbow numbers were also fairly similar, ranging from 19,000 – 28,000 fish. The tendency of Dearborn rainbows to overwinter in this disease-free environment is encouraging because other studies have shown that resistance to the disease increases as young fish get larger. To test this theory, samples of Dearborn fish were exposed to high levels of whirling disease in Little Prickly Pear Creek in the summer of 2000 then taken to the lab for analysis. Results are not available yet.

The big question is how all of this will affect fishing on the Missouri River. For the short term, things look very good, but there are signs of change in the long term. Fish population estimates on two sections of the river (near Craig and Pelican Point) showed the highest numbers of age 2 and older rainbows ever recorded for the past 20 years. However, the number of yearling rainbows in the Craig area was close to record low and yearlings were also below normal in the Pelican Point area. Brown trout numbers were about normal. Fish population results for 2000 are not yet available, but biologists feel the trend of low numbers of juvenile rainbows in the river continues.

The combination of drought and whirling disease is certain to cause significant reductions in rainbow numbers in the upper river in the next 2-3 years. Rainbow production has been significantly affected in past drought cycles and water supply in the spawning tributaries this year was as poor if not worse than in 1988, which was a very poor year for rainbow production. The effects of drought will likely be compounded by whirling disease, particularly in the

upper river. The long-term health of the rainbow fishery will depend on the return of normal flow conditions and of equal importance, the extent to which whirling disease invades the spawning tributary system. The Dearborn will be the keystone to the river rainbow population. A significant river rainbow population can probably be maintained if the Dearborn stays uninfected or only lightly infected and if yearling rainbows migrating from the Dearborn can withstand high exposure to whirling disease when they reach the Missouri. Research will focus on these questions and hopefully allow us to predict an outcome.

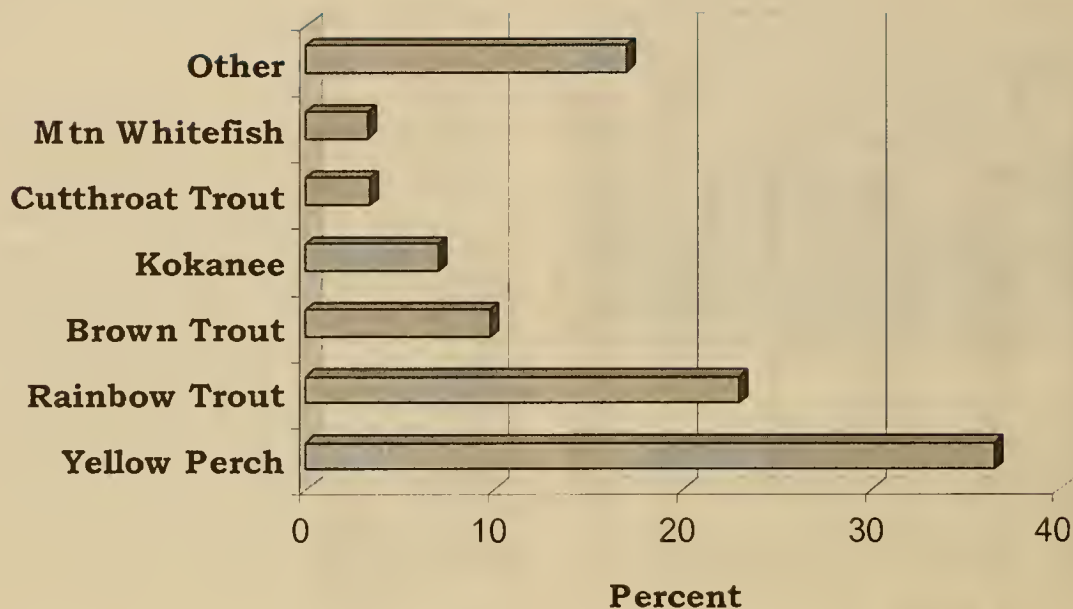
### **STATUS OF WESTSLOPE CUTTHROAT IN NORTH-CENTRAL MONTANA**

The original native trout in the Missouri River drainage in Montana is actually the westslope cutthroat trout, the same fish that is native west of the Divide. Experts believe that cutthroat from western Montana were able to cross over to the east side about 10,000 years ago when huge glacial lakes spilled fish across the Divide. Westslope cutthroat trout (WCT) began to decline in north-central Montana with the arrival of settlers in the late 1800's. Logging, mining, grazing and irrigation all took their toll but the biggest impact probably came from the introduction of new trout species to the area, including brook trout, rainbow trout, and brown trout. Brook trout appear to out-compete WCT in many streams while rainbows interbreed with WCT. Brown trout have been less of a threat because they tend to live in the lower reaches of most rivers and streams in this area.

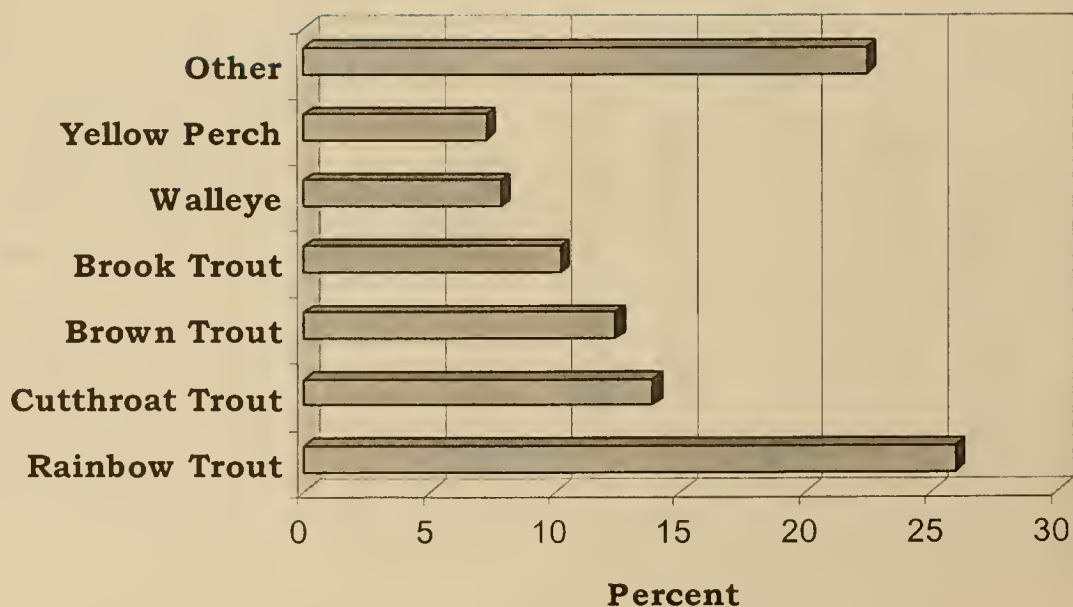
WCT was petitioned for listing as a federally threatened species in 1997. The petition was denied and the State of Montana developed its own WCT restoration plan in 1999. In order to implement this plan, our first step has been to accurately determine the distribution and status of the fish here in north-central Montana, which is no small task since there are about 25,000 miles of rivers and streams in this area. Anne Tews, a biologist in Lewistown, took on the task of working with other state and federal biologists in our area to assemble a comprehensive database on all the known remaining WCT populations in our area. The results are sobering. We estimate WCT originally were present in about 4300 miles of rivers and streams in this area. Today there are only about 70 populations of genetically pure WCT left and they occupy only about 200 miles of stream length. This represents less than 5% of their original habitat in our area. In contrast, rainbow and brook trout are currently found in about 3500 miles of rivers and streams here.

Nearly all of the remaining pure WCT populations are found in short segments (less than 5 miles) of tiny streams above waterfalls or some other natural barrier where they have been safe from invading alien trout. Surprisingly, the majority of the remnant populations are in the Belt Creek drainage near Great Falls in the Little Belt mountains. Unfortunately, most of the populations have so few fish in such little habitat space that they are feared to be at high risk of extinction over the long term.

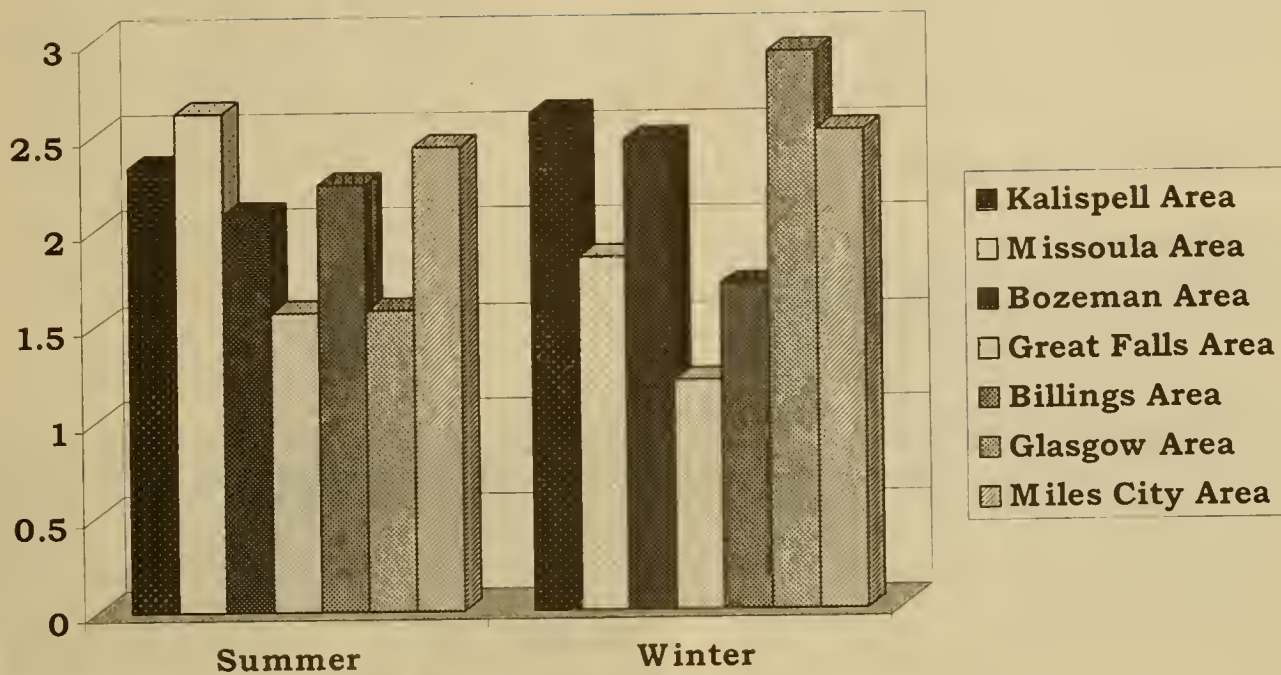
### Statewide Top Game and Sport Fish December 1998 Through April 1999



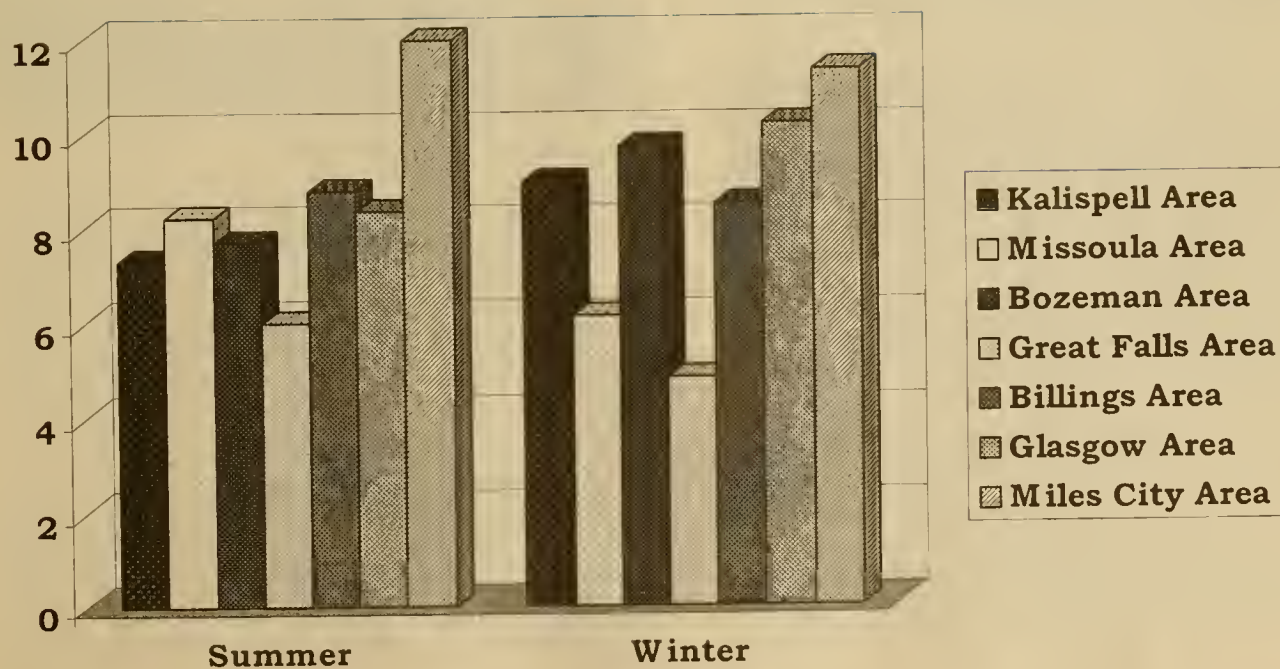
### Statewide Top Game and Sport Fish May 1999 Through November 1999



### Average Number of Fish Caught Per Hour 1999 Log Year



### Average Number of Fish Caught Per Day 1999 Log Year



## **MONTANA REGIONAL UPDATES**

There is a tremendous amount of work to be done. In the near term, the main focus is to try and protect the existing populations. We are also working on expanding existing populations above waterfalls in upstream areas when feasible. In the long run, we expect that exotic trout will be removed from some headwater streams with chemical treatment and restocked with native WCT. The native fish in most cases provides better fishing in small headwater streams because they are aggressive feeders and they also tend to live longer and attain larger sizes than brook trout. Watch for more progress reports in future issues of this newsletter.

### **REGION FIVE - BILLINGS**

#### **BIGHORN RIVER**

The most important factor controlling fish populations on the Bighorn River is streamflow. The Bighorn River seems to be capable of filling all available water in the upper river with trout in a fairly short time. If the water is there, it is soon filled with fish. On the other hand, when flows in the Bighorn are reduced substantially, as they were this year, there is no longer enough water volume to support the trout populations that are present, and fish are lost.

After several years of excellent flows, the Bighorn was affected by the same drought that affected most of the streams in Montana. Fortunately, due to good planning by the Bureau of Reclamation (BOR), the Bighorn was not hit nearly as hard as many of the streams in the state. In anticipation of the coming drought the BOR's Montana Area Office filled Bighorn Lake almost 20 feet higher than normal during spring. This extra water allowed the Bureau to maintain Bighorn River flows close to the preferred minimum fisheries flow of 2,500 cfs throughout the season. Although the fish populations in the Bighorn were compressed into a smaller river, most of the fisheries functions of the river were maintained, and impacts on the overall fishery should be minimal.

The lower flows that hampered fish populations were good for fishermen. Most anglers felt the flows on the Bighorn this past summer were about perfect for fishing the river, and anglers still found plenty of fish to keep them happy. Total fish numbers were down with the lower flows, but because the remaining fish were compressed into a smaller river there was no noticeable difference to the angler. Fishing remained good to excellent throughout the season, especially with the colder water that comes with lower flows on the Bighorn. Probably a bigger impact on anglers was their being squeezed into a smaller area, increasing the crowding on the river.

June sampling on the upper river just downstream of Three Mile (Lind) Fishing Access Site (FAS) found lots of 14 to 17 inch trout (both rainbow and browns), but not many larger than 18 inches. The major trout forage on the Bighorn is small aquatic insects, which are used more efficiently by small trout than by large trout. When lower flows pack all the fish together and increase competition, it

is usually the large fish that suffer first. Most of the trout sampled in June were in pretty poor shape, especially the larger brown trout coming out of their fall spawn. The general condition of these fish improved noticeably, however, in the three weeks between the marking and recapture runs.

Another impact of low flows is that they dewater the sidechannels and shallow areas used for rearing areas by young trout. These small fish are forced out into the main channel where hungry large trout are waiting. Low numbers of yearling rainbow and brown trout sampled in the spring were probably partially due to this predation.

Fall electrofishing near Mallards Landing FAS showed good numbers of trout, with more fish in the 13 to 16 inch size range. Again, few were larger than 18 inches. There appeared to be strong young-of-year populations of both rainbow and brown trout present in this lower section. If flow conditions improve this next year, there should be plenty of fish available to start filling the extra water.



#### **BOULDER RIVER DRAINAGE**

Spring 2000 trout population estimates made in the Boulder River near the mouth of the West Boulder indicate brown trout numbers declined about 12% while rainbows increased 104% from estimates made in 1997. Although the ratio of browns to rainbows has recently shifted more toward rainbows, the total number of trout within the section has not changed significantly over the past ten years. The numbers of larger rainbow and brown trout have increased following implementation of more restrictive fish limits intended to protect the larger fish. In the spring of 2000 Montana Fish, Wildlife and Parks (FWP) evaluated the rainbow trout spawning activity of the mid-Boulder River in the general vicinity of the Natural Bridge. The effort was particularly concentrated in and around a proposed 4,600-foot stream reconfiguration project within the Beaver Meadow Ranch. Previous studies

## **MONTANA REGIONAL UPDATES**

have shown the river reach from the Natural Bridge down to the mouth of the East Boulder is an important spawning destination for trout from the Boulder and Yellowstone Rivers. As part of this project, a helicopter was used to locate spawning rainbows and redds downstream from the falls and also in a reach immediately upstream from the falls and also in a reach immediately upstream from the Natural Bridge. This effort to quantify rainbow spawning activity should provide good baseline information upon which to base future resource decisions. Brown trout spawning activity in this reach will be evaluated during the fall of 2000.

### **STILLWATER RIVER DRAINAGE**

Spring 2000 fish population estimates conducted in the Moraine Section of the upper Stillwater River (located just downstream from Nye) indicate a 6% increase in larger brown trout while rainbows decreased about 23%. Total trout numbers for fish longer than five inches within the Moraine section are about 1,920 per mile. As in the Boulder River, implementation of more restrictive fish limits intended to protect the large fish has led to an increase in the number of large brown trout within this reach of the Stillwater River.

As part of an ongoing cutthroat enhancement/brown trout removal project in the headwaters of Bad Canyon Creek, an EA was prepared to address chemical removal. The project has been a cooperative effort involving the USFS, BLM, FWP and private landowners to restore Yellowstone cutthroat populations in the upper three miles of the stream. Extensive removal efforts dating back to 1993 using backpack electrofishing units have been ineffective within this stream environment. The proposed project is currently on hold.

### **YELLOWSTONE RIVER**

A fish passage structure was completed at Huntley Dam during the fall and winter of 1999-2000. Huntley Dam is a concrete diversion dam located approximately 9 miles downstream of Billings. It is the largest, and most upstream of six low-head irrigation dams which span the lower Yellowstone River. Huntley Dam suffered serious structural damage during recent high flow years on the Yellowstone. Fish passage was included as part of the reconstruction plan for the dam. The fish passage structure amounted to a roughened bypass channel, which was constructed around the north end of the dam this past winter. Additional modifications this fall will improve the gradient in the lower end of the channel. Hopefully, the Huntley project is the first step in improving fish passage at all of the diversion dams along the Yellowstone River.

Considerable effort was spent electrofishing below Huntley Dam during the spring and summer in cooperation with BOR. Several thousand fish were captured and marked with coded wire tags to help in evaluating fish passage at Huntley. Ling were the most common game fish captured with over 100, up to about 5 pounds, being captured and

tagged. Most of the fish marked were nongame species. A few marked fish were recaptured above Huntley Dam later in the summer. Since a natural sidechannel provides fish passage around Huntley Dam during high water, it is possible these fish may have moved up through this side channel rather than the fish passage channel.

The fish passage channel was electrofished and snorkeled to evaluate fish use this summer. The channel was full of smaller fish, but movement through the channel was not documented. One day of netting with hoop nets did not capture any fish moving upstream. More intense netting and some hydroacoustic sampling will be used next spring and summer to evaluate fish movement through the channel.



Huntley fish passage

A five year effort to improve fishing in the Yellowstone River near Billings cumulated with the stocking of 80,000 sub-catchable Yellowstone cutthroat trout into the Yellowstone River between Laurel and Billings. The goal for this program, as described in the detailed EA completed in the fall of 1999, is to develop a put-grow-and-take fishery for this native trout species in this section of river. Numerous anglers reported catching small cutthroat shortly after they were planted. Occasional reports of cutthroat catches filtered in through the summer. Extremely low water and warm water temperatures prevented the monitoring of this fishery planned for the summer. As soon as flows increase enough to allow the use of a jet boat, shocking will be used to evaluate the distribution of these stocked fish and collect growth data. Hopefully, this project will result in the establishment of a popular urban stream fishery close to the largest population center in Montana.

### **SEP/CHAMBERS SPRING CREEK**

A spawning enhancement project was completed to restore 1,200 feet of a small spring creek flowing into the Yellowstone River about ten miles east of Big Timber. The

project involved removing two barriers to fish migration, protecting the spring source, removing in-channel sediment, reconstructing the channel to create a more natural meander pattern, installing spawning gravels, planting willows, installing riparian fencing along the entire stream length, and providing off-stream watering tanks for livestock.

The new project will provide fish passage into the spring creek for trout from the Yellowstone River to use for spawning and rearing habitat. A remote site incubator was used in 1999 and 2000 to hatch Yellowstone cutthroat trout into the spring creek.

### **MUSSELSHELL RIVER**

The Musselshell River was the most severely impacted stream in Region 5 during the 2000 drought. The Musselshell Drainage has had several years of below-normal precipitation preceding this drought. Before irrigation started in the spring of 2000, the Musselshell River around Rygate and Shawmut was already down to a trickle flowing between pools. Fortunately, Bair, Martinsdale, and Deadmans Basin reservoirs were all fairly full going into the irrigation season. Releases from these storage reservoirs kept some water flowing in the Musselshell during much of the summer. Even with these releases, the river dropped to extremely low levels early in the season, and flows continued to drop as the reservoirs were drained. No fish kills were observed or reported along the Musselshell, but this season had to have been hard on the fishery.

Deadmans Basin Water Users hired water commissioners to help manage irrigation water in their system for the first time this year. The use of commissioners provided an equitable distribution of the limited water, and helped maintain water levels in Deadmans later into the summer. A court order shut down all irrigation below Deadmans Basin on August 12. A minimal flow of 11 cfs was maintained out of the reservoir after that date to provide stock water downstream, and to provide some water for the town of Melstone.

All three storage reservoirs were drained this summer and are going into the fall nearly empty. It will take a good wet winter to refill these reservoirs, or the Musselshell Drainage could be in even worse shape next summer without this stored water.

### **BIGHORN LAKE**

Despite drought conditions this summer, water levels in Bighorn Lake remained good throughout the season. The BOR anticipated the drought and stored enough spring runoff to boost Bighorn Lake almost 20 feet higher than normal. This extra storage allowed the Bureau to maintain flows in the Bighorn River downstream while maintaining lake levels.

Two nights of spring electrofishing near Ok-A-Beh captured 140 walleye. These fish averaged 18 inches long,

with many of the fish around 20 inches. Seventy-seven smallmouth bass were also captured during this effort, which was a huge increase over previous sampling.

Anglers reported catching lots of smaller walleye throughout the season, but found few of the larger walleye seen in the spring. Smallmouth bass fishing was great all over the lake. Serious walleye anglers are complaining that there are so many smallmouth bass that they can't get their bait down through them to reach the walleye. The largest smallmouth collected during electrofishing was 13.1 inches long and weighed 1.37 pounds, but anglers reported catching smallmouth over 3 pounds. There were still quite a few small emerald shiners throughout the lake, but the large clouds of bigger emeralds seen in recent years did not seem to be present this summer. The expanding smallmouth population may be taking a toll on this forage base.

### **COONEY RESERVOIR**

Cooney Reservoir management direction to maintain a mixed trout/walleye fishery continues on schedule. From 1996 through 2000, 417 larger walleyes averaging 23.7 inches and 6.12 pounds have been tagged in Cooney. Tag returns indicate that as of mid-July 2000, anglers have taken 8.5% of these tagged walleyes. Walleyes appear to be controlling the sucker population through effective cropping of nearly all subadult suckers, thus preventing recruitment. A large Merwin trap fished in Cooney for 18 days in April 2000 took 2892 white suckers ranging in length from 11.8 to 20.34 inches. Black crappie numbers in Cooney have been held in check due to predation by walleyes and harvest by anglers. Annual rainbow stocking rates have been increased from 100,000 in the late 1980's to 150,000 from 1990 through 1995, to an average of 200,000 since 1996. In spite of this increase, winter carryover has steadily declined. This decline is likely due to heavy angler harvest coupled with walleye predation on the rainbows.

To better understand angling patterns, use, harvest success, methods and attitudes, a creel census was run on Cooney during the peak summer use period from July 4 to September 7, 1998. Ninety-eight percent of the angling use at Cooney was by residents, and 94% of the use was by anglers living within 60 miles of the reservoir. Boat anglers outnumbered shore anglers about three to one (76% to 24%). Boat anglers were more successful at catching both trout and walleyes, taking 2.1 trout and 1.5 walleyes to every one caught from shore. Catch rates for all species combined were 0.94 fish per hour for shore anglers and 1.51 for boat anglers. Combined shore and boat angler catch rates were 1.27 for all fish caught, and 0.48 for all fish kept.

### **ABSAROKA-BEARTOOTH MOUNTAIN LAKES**

A two-person crew backpacked into thirty-seven alpine lakes in the Absaroka-Beartooth Mountains in 2000. Information collected is used to update the high mountain lake database. Our goal is to survey approximately 30-35

## ***MONTANA REGIONAL UPDATES***

lakes each year, and to cover all the 328 lakes supporting fisheries about once every ten years. Nets set in Kersey Lake, the only lake in the Absarokee-Beartooth Mountains with lake trout, took several lake trout up to eleven pounds. They were planted in 1981 to help control a stunted brook trout population, and appear to be doing a fairly good job. A new state record golden trout was taken from Cave Lake, a high mountain lake located in the Crazy Mountains.

### **REGIONAL LAKES AND PONDS**

Drought conditions this summer took its toll on most ponds throughout the region. Anita Reservoir on the Huntley Irrigation System was almost totally dewatered by early summer. Most smaller trout and bass ponds were very low or totally dewatered. Many pond plants scheduled for this summer were canceled due to lack of water.

Lake Josephine, located in Riverfront Park in Billings, continued to provide a great kids and family fishery this summer. Small crappie and pumpkinseed sunfish were plentiful along with a fair population of smaller perch. This lake has been a great place to take young anglers to catch their first fish. Most crappie captured during summer netting measured 6 to 7 inches, while the perch averaged about 6 inches. Largemouth bass fishing continued to be fair, but not as hot as a couple of years ago. For the first time, a bluegill sunfish was netted from Lake Josephine this summer. It is likely this fish was introduced illegally by some "bucket biologist". It remains to be seen if bluegill will become established in the lake (and Yellowstone River Drainage), and what impact they may have on existing fisheries.

Thirty channel catfish ranging from 11.9 to over 19 inches were captured during summer netting. Catfish appear to be doing very well in the lake. Anglers catch an occasional catfish while fishing for other species, but this fishery has not yet caught on at Lake Josephine.

Arapooish Pond near Hardin has been one of the most consistent largemouth bass fisheries in Region 5 since the Bighorn County Parks Board and FWP installed an aeration system in the lake. This lake is entirely self-sustaining and produces a large number of bass each year. Fishing is usually best in the spring before the vegetation hampers it, and again in the fall as the vegetation dies. Water levels in Arapooish, which are controlled by ground water inflow from the Bighorn River, came down as river flows dropped, but were still adequate to maintain the fishery.

Arapooish was not sampled this year, but at least three size classes of bass were observed during spring. A few 4 to 6 inch bass were observed along with many 9 to 10 inches long. Several larger (14 to 16 inch) spawners were observed guarding nests along the shoreline.

Lake Elmo continued to provide plenty of recreation for anglers of all ages as the trout fishery entered its third

season. Planted rainbows have been overwintering fine in the lake. Poor ice conditions again last winter prevented anglers from taking advantage of these overwintering trout. Lake Elmo received 9,600 catchable sized trout this summer, with half going in during the spring and the other half in late summer. Approximately 500 retired brood stock from the Ennis hatchery were also stocked into Lake Elmo in late September. Some of these fish weighed over 5 pounds and could provide some real excitement for a young angler fishing the lake.

Trout fishing at Lake Elmo took off early in the spring and remained good through the hot part of the summer. Anglers also found a few crappie and largemouth bass and lots of small perch to add to the excitement. A 4.25-pound largemouth was found dead along the shore of Lake Elmo in the spring, so it appears there are still some nice bass left in the lake. A few channel catfish were caught throughout the season, but catfish didn't draw the anglers as they did before the trout were first stocked.

Spring netting captured 32 rainbows ranging from 7.9 to 13 inches long. Only 4 channel catfish were netted in the spring, but they averaged 18.1 inches and 2.12 pounds. No crappie of any size were captured during spring netting, but fall netting found at least three size groups of crappie with the largest one being 11.3 inches.

Approximately 16,000 small channel catfish were stocked into Lake Elmo in two different plants, nearly double the number normally planted into Lake Elmo. Stocking was increased due to the small size of the fish available. For the first time in several years, approximately 6,400 2-inch largemouth bass were also planted this summer.

Broadview Pond was another casualty of the 2000 drought. Broadview actually entered last winter with very low water levels, and some winterkill was expected. No fish were found around the shoreline at ice out, so any loss that did occur was minor. Spring netting captured over 200 small crappie, a few carp, and one 32.6 inch, 8.7-pound tiger muskie. The pond only filled slightly in the spring before water levels started to drop again. By fall, water levels were lower than any of the old-time locals could remember. It is likely the pond will winterkill this winter, but if any fish managed to survive, it would be carp. To insure that all the carp are removed, FWP has completed an EA and plans to treat the remaining water in Broadview Pond with rotenone this fall. Broadview will be restocked with rainbow trout once water levels get back to normal. The trout plant may be followed with one or more warmwater species in the future.

Deadmans Basin Reservoir provided much of the water that kept the lower Musselshell River flowing this summer, but by the end of the summer Deadmans had been drawn down as far as the outlet structure would allow. Fortunately the design of the outlet at Deadmans is such that 20 to 30 feet of water remains in the reservoir once the bottom of the outlet is reached, which should be enough water to prevent serious winter-kill problems this winter.

Low water levels could effect the Deadmans fishery in a different way. This was the third year that a limited number of tiger muskies were stocked into Deadmans Basin to prey upon the sucker population the reservoir. From the beginning, this program was intended to establish enough tiger muskies to provide a trophy fishery and reduce sucker numbers enough to retain a prey base and allow the trout fishery to rebound. (Sauger will be introduced when a balance is achieved that also provides adequate small sucker prey.) The large drawdown at Deadmans this summer compressed all fish in the reservoir into a much smaller volume of water. Fish were pulled away from the limited shoreline cover and packed into an open basin with the tiger muskies. The tiger muskies have probably taken full advantage of this situation and are likely growing very well. This low water condition may upset the balance in favor of the tiger muskies, however, and reduce sucker numbers more than desired.

Spring netting in Deadmans Basin caught 35 rainbow ranging from 8.7 to 14.9 inches and 20 kokanee from 10.7 to 13.7 inches. The average size was up slightly for both species, but it is too soon to tie this increase to predation on suckers. Deadmans did receive 200,000 rainbow trout and 100,000 kokanee salmon this year, but many of them may have already become tiger muskie chow. A standard gill net series set in May 2000 caught 11 tiger muskies. One fish from the 1999 plant was 15 inches long and weighed 0.72 pounds. The remaining 10 fish were from the 1998 plants and ranged from 22.7 to 25.9 inches long, with an average length of 24.8 inches. The largest fish weighed 4.57 pounds. It will be interesting to see what the Deadmans fishery looks like once the reservoir refills.



## REGION SIX - GLASGOW

### FORT PECK RESERVOIR

More than 2,100 walleye spawners were captured and released during spring trap netting in the upper Big Dry Arm. This is less than half the number of fish spawned in 1999. Female and male average size increased slightly from 1999. The average length and weight of female walleye was 24.3 inches and 6.3 pounds with males averaging 17.8 inches and 2.4 pounds. These eggs provided 27 million fry and 750,000 fingerlings to Fort Peck. Fort Peck also received 130,000 fingerlings and 2.1 million fry from North Dakota. Eggs from the Fort Peck spawn were also sent to South Dakota and New Mexico.

An alternative method of spawning walleye was evaluated this year. Sperm extender, a method of preserving semen, was used to reduce the number of male walleye needed and to improve fertilization of eggs. Although eye up was similar for both the traditional method and the extender, the extender method allowed us to continue the walleye spawn when very few male walleye were present during the late peak to end of the spawn. The extender method will be evaluated again this coming spring.

The walleye volunteers efforts and combined efforts with MFWP staff made for an exceptional year. It was the third best egg take on record. For the first time, FWP was able to provide a token of appreciation for the volunteer effort. Baseball caps emblazoned with a walleye and the caption of, "Fort Peck Spawn 2000", were given to the volunteers.

An attempt was made to spawn northern pike in 2000 as well. Six hundred three were captured. Females averaged 8.4 pounds and males averaged 4.5 pounds, better than a quarter pound average increase for both sexes from 1999. A request for 100,000 fingerling northern was made but not met as egg quality was poor. An attempt will be made to spawn northern pike in 2001 for state needs and for Fort Peck.

Anglers reported that walleye fishing was good throughout most of the season with lots of larger fish taken. Smallmouth Bass and northern pike fishing was also good this year.

The annual gill netting survey showed good size structure of walleye with a strong group of fish less than 14 inches recruiting to the fishery. Northern pike average size continued to increase. Spawning habitat for northern pike has been lost as reservoir levels decline.

Preliminary seining data indicate a good year for smallmouth bass recruitment. Forage fish numbers have declined since 1997, but remain at adequate levels.

Cisco young-of-year netting shows another low year in reproduction. Cisco are fall spawners and have good years of recruitment when ice cover on the reservoir comes in December or January. In "open" winters lack of ice allows wave action to stir bottom sediments, which smother eggs.

Nearly 240,000 chinook salmon were stocked in the spring. This should produce a good return in the fall of 2002. Eggs were provided by both North and South Dakota and by the Fort Peck spawn. The Miles City and Giant Springs hatcheries were invaluable in making the 2000 stocking possible. A poor return of salmon was expected in the fall of 2000; no egg take was attempted. North Dakota anticipates providing surplus eggs and South Dakota has plans of providing all of their salmon eggs to Montana. A strong stocking is expected again in 2001, thanks to the Dakotas.

### **LOWER MISSOURI / YELLOWSTONE RIVER PALLID STURGEON STUDY 2000**

This year's fieldwork featured the capture of 13 adult pallid sturgeon in the Yellowstone River confluence area during April. Seven of the fish were "new fish" and the others were recaptures from previous years capture and tagging efforts. Several were transported to the Garrison National Fish hatchery in North Dakota to determine the state of gonad maturation and later used for spawning at the hatchery. Plans to release hatchery-reared progeny produced in 1999 at Garrison in Montana waters were again postponed due to possible disease problems which surfaced in 1999 at the Garrison hatchery. However, the Gavin's Point hatchery in South Dakota also has hatchery reared pallids from 1998 and 1999 and has not experienced any pallid-associated disease problems. The Montana Fish Health Committee has given the okay to release pallid sturgeon from Gavin's Point in the Yellowstone and lower Missouri (below Fort Peck Dam) rivers this year. Stocking of these fish will occur during October in the Sidney and Fairview areas of the Yellowstone River and the Culbertson and Wolf Point areas of the Missouri River.

Other work involved the capture of young-of-the-year (YOY) shovelnose sturgeon in the Williston, North Dakota area of the Missouri River in August. A total of 144 YOY were captured by bottom trawling and FED-EX'd live to the University of California-Davis for viral testing experimentation. A similar effort last year failed to detect any evidence of a virus. Also, 86 wild juvenile shovelnose sturgeon were captured in the Yellowstone River during August and tissue samples extracted from the fins and a barbel for viral testing at the Bozeman Fish Tech Center. The purpose of attempting to find evidence of the virus in wild fish is to show that the virus is endemic (historically present in the wild) and not necessarily a North Dakota hatchery problem.

Nine sites on the Missouri River below Fort Peck Dam were monitored during June and July by netting, trawling, seining, larval fish sampling, hoop netting, and electrofishing. The purpose of the monitoring is to collect and establish baseline information relative to fish populations, water temperatures, and physical habitat of the river. This information will be used to evaluate the possible benefits to the fishery by increased stream flows and warmer water temperatures associated with releasing reservoir water via the Fort Peck spillway. It also is an



attempt to induce pallid sturgeon movement up the Missouri River for spawning and recruitment into the wild population.

There are only about 250 wild adult pallid sturgeon remaining in the lower Yellowstone/Missouri river population and no evidence of successful spawning or recruitment of this species has been documented for at least the past decade. Releases from the spillway are an attempt to somewhat mimic the natural hydrograph of the river during the spring prior to the construction of the Fort Peck Dam. Even if pallid sturgeon do not respond to the increased flows and warmer water temperatures by migrating upriver and spawning (perhaps because so few fish remain), other native fishes such as sauger, shovelnose sturgeon, paddlefish, goldeye, freshwater drum, sturgeon, sicklefin, and flathead chubs, and others will definitely benefit. A "mini-release" is scheduled for 2001, primarily to check the physical integrity of the spillway, and a more substantial release schedule during late May and June would occur in 2002. The present low reservoir level may negate or delay spillway discharges, particularly during 2001. A high snowpack and above average spring moisture is needed to recharge Fort Peck Reservoir in order for spillway releases to occur.

### **FRESNO RESERVOIR AND TAILWATER FAS**

Fresno Reservoir was severely affected by the drought of 2000. The reservoir has no guaranteed minimum pool and is subject to irrigation demands which dictate the success or failure of management efforts. Though some storage was gained in the fall, it was too little too late. The year 2001 will be a rebuilding year given favorable water conditions. The fishery could be "on-line" again in 3 to 4 years. Walleye fingerlings will be planted next year to assist in establishing a strong year-class. A team consisting of FWP, Fresno Chapter of Walleye's Unlimited, and the Bureau of Reclamation seized the opportunity afforded by the drought and extended and widened the Kremlin Bay boat ramp. An additional 40 feet of ramp was installed. An Environmental Assessment to look at potential forage fish options for Fresno is wrapping up and should be available for review this winter. Fishing for trout in the fast water below the dam is becoming very popular. Rainbows are numerous and brown trout introduced three

## **MONTANA REGIONAL UPDATES**

years ago are approaching five pounds. More floaters are utilizing the launching facilities.

### **NELSON RESERVOIR**

Drawdowns in 2000 will affect walleye numbers for the next few years but not to the extent experienced at Fresno Reservoir. Results of the creel census conducted in 1999 indicate pressure has increased since the mid 80's but is leveling off. Catch rates were excellent for walleye at 0.5 fish/hour. Harvested walleye averaged 15.7 inches and 1.27 pounds. Approximately 5,000 fishermen used the reservoir during the summer. A toxic blue-green algae incident reduced water based recreation for about a month. A walleye population estimate determined the age 3 and older population to be about 19,100 fish at the start of the season. About 6,020 of those were harvested. Fishermen released 5,060 walleye back to the lake. Walleye numbers had been decreasing since the peak in 1996. The drought effect will certainly add to the decline. The BOR has encountered funding problems, which will delay work on the boat ramp site near the dam.

### **BEAVER CREEK RESERVOIR**

Fishermen have begun to figure out how to catch the chunky walleye roaming this water. Numerous fish in the 4-7 pound range have been taken. A 14.9 pound walleye was caught and released by FWP in September. Egg development over the winter could put this fish in the 16-17 pound range. Night crawler rigs are giving way to crank baits and large rubber bodied jigs in order to get by the abundant, often pesky perch. This will be the first winter in which live minnows will be allowed for use as bait. A winter walleye fishery is expected to develop and catches of pike on tip-ups should increase. Trout survival has been poor the last few years due to pike predation. However, pike numbers appear to be down somewhat, which may allow for a resurgence of the trout fishery. Surviving trout are in excellent condition at 2-3 pounds. Yellow perch are abundant and are much sought after through the ice. Smallmouth bass are showing up in the creel in fair numbers with some 2-3 pounders.

### **BEAR PAW LAKE**

The sucker war is being won by FWP using a combination of trapping, removal and smallmouth bass predation. No suckers under 10 inches have been found in the reservoir for several years and the estimate of adult suckers is down to 1,600 fish. This is quite a reduction from the 75,000 suckers present only 8 years ago. Condition of both rainbow and cutthroat trout is improving. Large catches of 8-10 inch bass have been observed.

### **H. C. KUHR RESERVOIR**

This reservoir has been the most consistent trout producer the last few years. Numerous rainbows in the 2-3 pound range have been taken on both bait and fly. Water levels are somewhat low going into the winter, which may result in a winter kill.

### **DRY FORK RESERVOIR (SWARTZ DAM)**

This reservoir north of Chinook has been a steady producer of pike and perch. Perch up to two pounds were taken through the ice last winter. Largemouth bass introductions have not been successful and have been discontinued. The forage base has improved to the point that walleye were introduced this year.

### **COW CREEK RESERVOIR**

This is the "new kid on the block" which opened in August of 1999 for the first time to public fishing. It is located about 15 miles south of Lloyd. Through the courtesy of the Bill Cowan family, public fishing is allowed in this 70- acre impoundment on Cow Creek. The reservoir sports a healthy population of 1-2 pound walleyes and channel catfish. Tiger muskie and crappie have also been recently introduced. Boats are allowed at no wake speed. It is not



## **MONTANA REGIONAL UPDATES**

open to live minnow fishing. No overnight camping or open fires are allowed.

### **PADDLEFISH IN MISSOURI ABOVE FORT PECK**

A creel census was conducted in the spring of 2000. Trigger flows were not reached and fishing was spotty and slow. The catch from 3,600 snaggers was only 299 fish. Males averaged 33 pounds and females averaged 65 pounds. This is the third consecutive year flows have been low during the spawning season. A graduate study being conducted on paddlefish recruitment indicates reproductive success has been poor in all three of these years. Tagging of adult fish by FWP is on-going. Tag returns continue to indicate a low rate of harvest on this population.

### **BAILEY RESERVOIR**

This 70-acre reservoir near Kremlin is the destination for many in the western half of the state who are searching for some good crappie fishing. Many crappie in the half pound range can be taken here. There are also tons of perch, largemouth bass and northern pike if you're in the mood. Boats with electric motors are allowed. Live minnows are also allowed. Overnight camping is allowed with permission of the landowner.

### **OTHER AREA WATERS**

The drought provided a rare window of opportunity to rehabilitate a number of reservoirs which have been overrun with illegally introduced rough fish (suckers). Low water levels allowed for the use of less rotenone (fish poison) which is expensive, and ensured a better kill as springs and inflowing creeks are dried up and provide no refuge to hide in. Sentinel Reservoir in Phillips County, and Ross and Faber Reservoirs in Blaine County were successfully rehabilitated. All will be restocked with trout in 2001.

## **REGION SEVEN - MILES CITY**

### **YELLOWSTONE PADDLEFISH**

Angling for paddlefish during the 2000 season resulted in a relatively low harvest. Department creel census clerks checked 540 paddlefish at the Intake fishing access site during the six-week season. Low flows in the Yellowstone River during May and June was not adequate to stimulate large numbers of paddlefish to migrate from North Dakota waters.

### **SOUTHEASTERN MONTANA PONDS**

More than 100 small reservoirs (1 to 100 acres) are stocked with fish by the department in eleven southeastern Montana counties. Drought condition in 2000 has resulted in many of these reservoirs having low water levels. Some fish kills have already occurred and more are likely if fall rains do not replenish reservoir levels.

### **YELLOWSTONE RIVER CREEL CENSUS / SAUGER STUDY**

A Yellowstone River creel census was begun in September 2000 in the Miles City area to access fishing pressure, harvest and solicit tag returns from fishermen. Data will be collected for all fish species but information on sauger will be of particular interest. Sauger are the most highly sought game species in the lower Yellowstone and concerns exist that their numbers have not rebounded to pre-1980s drought levels. Factors affecting sauger numbers are passage over diversion dams, entrainment in irrigation canals, inadequate spawning and rearing flows in the lower 20 miles of Tongue River, competition from non-native species (walleye and smallmouth bass) and possibly increased fishing pressure. In addition to the creel census, a graduate research project will begin in spring 2001 to determine sauger movements and seasonal habitat use.

### **LOWER TONGUE RIVER**

Tongue River flows into the Yellowstone River at Miles City and its lower 20 miles is historically important for sauger spawning. Sauger spawning has not taken place in the lower Tongue for most of the last 20 years because of a condemned spillway at Tongue River Reservoir and the resulting altered releases from the reservoir. Completed reconstruction of that facility should allow for a more traditional flow pattern, which will provide for sauger spawning in most years. The Department is working with the Tongue River Management Committee and the MT Department of Natural Resources to see that sauger spawning and rearing flows are included in the reservoir management plan.

### **TONGUE RIVER RESERVOIR**

Fishing for crappie, smallmouth bass and walleye was good at Tongue River Reservoir in 2000. The reservoir was at full pool level for most of the recreation season and all of the new campground facilities are open. Department sampling in August 2000 showed most fish species reproduction to be adequate. The exception was smallmouth bass for which no young-of-the-year was found.

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## ARTICLES

### LOG BOOK STATS

Logholders have been keeping records for Fish, Wildlife & Parks for over fifty years, and some are still at it. The oldest on record is Ralph Hurlbert, who started keeping his log in January 1948, 53 years ago this month. Two other anglers started keeping their logs in 1951 (49 years ago) and are continuing to contribute data - Barney Buzdikian (5/22/51) and Robert B. Jam (11/27/1951). After those three, the rest of the top 25 are:

| Angler:            | Start Date*: | Years: |
|--------------------|--------------|--------|
| Henry Neidhardt    | 5/11/1953    | 47     |
| Harry Reinig Jr.   | 5/19/1953    | 47     |
| Daryl Stahl        | 5/10/1955    | 45     |
| C. A. Cosner       | 4/30/1956    | 44     |
| Jim Ritter         | 1/1/1957     | 44     |
| T. T. Gerlach      | 5/8/1957     | 43     |
| C. W. Potter       | 5/13/1957    | 43     |
| Francis C. Cyr     | 5/28/1957    | 43     |
| Duane Schwecke     | 8/21/1957    | 43     |
| Richard J. Grill   | 1/15/1958    | 43     |
| Loren Kujawa       | 5/8/1958     | 42     |
| David Stradley     | 5/8/1958     | 42     |
| Allen Kohler Jr.   | 5/19/1958    | 42     |
| Thomas J. Peterson | 5/1/1959     | 41     |
| Victor Keppers     | 5/18/1961    | 39     |
| Jerry C. Paul      | 1/1/1963     | 38     |
| Vick J. Applegate  | 5/10/1963    | 37     |
| Jack H. Carlson    | 5/10/1963    | 37     |
| Errol Benke        | 1/1/1964     | 37     |
| James Larson       | 1/1/1964     | 37     |
| E. M. Perkins      | 1/1/1964     | 37     |
| Melvin Rafish      | 1/1/1964     | 37     |

\*these are the dates we have on record, and may differ from actual start dates because of the reissuing of log numbers.

Thanks to all the logholders for their dedication to the program and their contribution to Montana fishing resources. Currently there are 936 active logholders in the program. If you know someone who would like to become a logholder, please send their name and address to the Fishing Log Program at:

Fisheries Information Services  
FWP Building, MSU Campus  
P.O. Box 173230  
Bozeman, MT 59717-3230, or call: (406) 994-6838

### WARM-WATER FISH STAMP NOW REQUIRED

As of March 1, 2000, a new \$5 Warm-Water Fish Stamp will be needed to possess warm-water game fish caught on numerous lakes, reservoirs, and other waters in central and eastern Montana. Stamp revenue, established by the 1999 Montana Legislature, will help fund a new multi-species hatchery planned near Fort Peck Dam.

The new stamp applies to all resident and nonresident anglers (except youth under age 15, seniors, and disabled

anglers) if they intend to keep the warm-water fish they catch on designated waters in which FWP plants warm-water fish. For a complete listing of these waters, consult the 2000 Montana Fishing Regulations.

### FWP ONLINE

Be sure and visit our webpage: <http://www.fwp.state.mt.us> for information on what's new at FWP, information on hunting, fishing, recreation, or parks, FWP news, outdoors education, printable applications, to report fish, wildlife or parks violations (TIP-MONT), to subscribe to Montana Outdoors, information on the new (1999) FWP Foundation, our 1999 annual report, and other resources.

### EURASIAN WATER MILFOIL

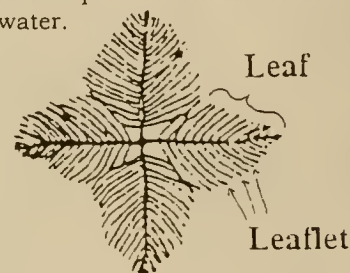
Eurasian water milfoil is an extremely aggressive non-native aquatic weed once sold as an aquarium plant. It grows rapidly, chokes out native plants, and spreads easily. Once introduced, water milfoil rapidly forms thick mats that severely hamper swimming, boating and fishing, and it cannot be eradicated once it is introduced.

Eurasian water milfoil reproduces by a process called fragmentation. Milfoil plants easily break into small pieces and each piece can form roots.

Preventing the spread of milfoil is the most effective way to control it. The most common locations for water milfoil to hitch a ride to a new lake are on boats, trailers, motors, propellers and anchors. Drying out of the plant fragments will not necessarily kill them. They simply rehydrate when returned to water and continue to grow.

Ways to identify Eurasian water milfoil:

- \* Leaves are arranged in whorls of four around the stem.
- \* Each leaf is made up of 12-24 paired leaflets. Native species have 6-12.
- \* The upper portion of the plant often turns reddish.
- \* The leaves collapse around the stem when removed from the water.



To stop Montana lakes from becoming infested with this destructive weed, take the following steps:

- Remove all aquatic plants and animals from boats, trailers, fishing gear, waterskiing equipment, etc.
- Drain lake or river water from your boat.
- Dispose of unwanted live bait on land.
- Wash your boat, tackle, down riggers and trailers.
- Be especially careful in inspecting and cleaning your equipment if you've fished or boated in adjacent states and are returning to Montana.

# Montana's Record-Setting Fish (1999)

| Species                   | Weight           | Angler                 | Year        | Location                               |
|---------------------------|------------------|------------------------|-------------|----------------------------------------|
| Arctic grayling           | 3.21 lbs         | Frederick C. Dahl      | 1994        | Handkerchief Lake                      |
| Bigmouth buffalo          | 57.75 lbs        | Craig D. Grasse!       | 1994        | Nelson Reservoir                       |
| Black bullhead            | 2.33 lbs         | Darwin Zempel, Jr.     | 1994        | Lower Flathead River                   |
| Black crappie             | 3.13 lbs         | Al Elser               | 1973        | Tongue River Reservoir                 |
| Blue sucker               | 11.46 lbs        | Doug Askin             | 1989        | Yellowstone River (near Miles City)    |
| Bluegill                  | 2.64 lbs         | Brent Fladmo           | 1983        | Peterson's Stock Dam                   |
| Brook trout               | 9.06 lbs         | John R. Cook           | 1940        | Lower Two Medicine Lake                |
| Brown trout               | 29.00 lbs        | E. H. "Peck" Bacon     | 1966        | Wade Lake                              |
| Bull trout                | 25.63 lbs        | James Hyer             | 1916        | unknown                                |
| Burbot (ling)             | 17.08 lbs        | Jeff E. Iwen           | 1989        | Missouri River (near Wolf Point)       |
| Carp                      | 40.20 lbs        | Jared Albus            | 1998        | Nelson Reservoir                       |
| Channel catfish           | 27.17 lbs        | Ed Ellertson           | 1998        | Castle Rock Reservoir                  |
| Chinook (king salmon)     | 31.13 lbs.       | Carl L. Niles          | 1991        | Fort Peck Reservoir                    |
| Cisco                     | 1.46 lbs         | Jim Liebelt            | 1990        | Dredge Cut Trout Pond                  |
| Coho salmon               | 4.68 lbs.        | Irven Stohl            | 1973        | Fort Peck Reservoir                    |
| Cutthroat trout           | 16.00 lbs        | William D. Sands       | 1955        | Red Eagle Lake                         |
| Flathead chub             | 0.53 lbs.        | Lyle McKeever          | 1998        | Marias River                           |
| Freshwater drum           | 20.44 lbs.       | Richard C. Lea         | 1987        | Fort Peck Reservoir                    |
| Golden trout              | 4.90 lbs.        | Carl Radonski          | 1993        | Lightning Lake                         |
| Goldeye                   | 2.91 lbs         | Vance "Bubba" Kielb    | 1989        | Irrigation canal (west of Malta)       |
| Green sunfish             | 0.56 lbs.        | Roger Fliger           | 1991        | Castle Rock Reservoir                  |
| <b>Kokanee (salmon)*</b>  | <b>6.03 lbs.</b> | <b>Bruce Elliott</b>   | <b>1999</b> | <b>Hauser Reservoir</b>                |
| Lake trout                | 42.00 lbs        | Dave Larson            | 1979        | Flathead Lake (east shore)             |
| Lake whitefish            | 10.08 lbs.       | Theo Hamby             | 1995        | Lower St. Mary Lake                    |
| <b>Largemouth bass*</b>   | <b>8.29 lbs.</b> | <b>Adam Nelson</b>     | <b>1999</b> | <b>Many Lakes</b>                      |
| Largescale sucker         | 5.06 lbs.        | Loren Kujawa           | 1996        | Kootenai River                         |
| Longnose sucker           | 3.27 lbs.        | Ray Quigley            | 1988        | Marias River                           |
| Mottled sculpin           | 0.03 lbs         | Blain X. Grisak        | 1997        | Sheep Creek (Meagher Co.)              |
| Mountain whitefish        | 5.09 lbs.        | Mervin "Frog" Fenimore | 1987        | Kootenai River                         |
| Northern pike             | 37.50 lbs.       | Lance Moyler           | 1972        | Tongue River Reservoir                 |
| Northern squawfish        | 7.88 lbs.        | Darrel Torgrimson      | 1991        | Noxon Rapids Reservoir                 |
| Paddlefish                | 142.50 lbs.      | Larry Branstetter      | 1973        | Missouri River                         |
| <b>Peamouth*</b>          | <b>0.74 lbs.</b> | <b>Angela Price</b>    | <b>1999</b> | <b>Noxon Rapids Reservoir</b>          |
| Pumpkinseed               | 0.95 lbs         | Tim Colver             | 1985        | Milnor Lake                            |
| <b>Pygmy whitefish*</b>   | <b>0.18 lbs.</b> | <b>Frank Gamma</b>     | <b>1999</b> | <b>Ashley Lake</b>                     |
| Rainbow trout             | 33.1 lbs.        | Jack Housel, Jr.       | 1997        | Kootenai River (David Thompson Bridge) |
| Rainbow-cutthroat hybrid  | 30.25 lbs.       | Pat Kelly              | 1982        | Ashley Lake                            |
| River carpsucker          | 3.50 lbs.        | James Jessen           | 1991        | Yellowstone River near Terry           |
| Rock bass                 | 0.57 lbs.        | Don Holzheimer         | 1989        | Tongue River Reservoir                 |
| Sauger                    | 8.81 lbs         | Gene Moore             | 1994        | Fort Peck Reservoir                    |
| Shorthead redhorse sucker | 4.68 lbs.        | Ray Quigley            | 1985        | Marias River near Loma                 |
| Shortnose gar             | 3.06 lbs.        | John Johnson           | 1977        | Fort Peck dredge cuts                  |
| Shovelnose sturgeon       | 13.72 lbs.       | Sidney L. Storm        | 1986        | Missouri River                         |
| <b>Smallmouth bass*</b>   | <b>6.34 lbs.</b> | <b>Richard Babbitt</b> | <b>1999</b> | <b>Flathead River</b>                  |
| Smallmouth buffalo        | 32.63 lbs        | Richard Liesener       | 1994        | Nelson Reservoir                       |
| Stonecat                  | 0.54 lbs         | Dale Bjerga            | 1996        | Milk River                             |
| Tiger muskellunge         | 27.00 lbs        | Dan Dupea              | 1994        | Lebo Lake                              |
| Tiger trout               | 4.04 lbs         | Joe Sobczak            | 1997        | Bear Lake                              |
| Utah chub                 | 1.81 lbs         | Eugene Bastian         | 1992        | Canyon Ferry Reservoir                 |
| Walleye                   | 16.38 lbs        | Steven McMorris        | 1996        | Cooney Reservoir                       |
| White bass                | 2.25 lbs.        | Vernon Pacovsky        | 1998        | Missouri River                         |
| White crappie             | 3.68 lbs         | Gene Bassett           | 1996        | Tongue River Reservoir                 |
| White sturgeon            | 96.00 lbs        | Herb Stout             | 1968        | Kootenai River                         |
| White sucker              | 5.33 lbs.        | Fred Perry             | 1983        | Nelson Reservoir                       |
| Yellow bullhead           | 0.93 lbs         | Carl Radonski          | 1998        | Tongue River Reservoir                 |
| Yellow perch              | 2.37 lbs.        | Vernon Schmid          | 1988        | Ashley Lake                            |

**\*New Montana record for 1999**

## 1999 MONTANA FISH RECORDS

# BASS BONANZA

After taking a back seat to eastern Montana for a couple of years, western Montana swept top honors in the fish records competition for 1999. Of five new records, four were posted west of the continental divide.

**ADAM NELSON** of Bigfork landed an 8.29-pound largemouth bass last June at Many Lakes near Bigfork, eclipsing a record from Milnor Lake set in 1984. Nelson caught his 22-inch fish on a spinnerbait with plastic worm.

In July, Missoula angler **RICHARD BABBITT** caught a smallmouth bass in the Flathead River weighing 6.34 pounds, edging the previous mark of 6.20 pounds set in 1998 at Fort Peck Reservoir. Like Nelson's largemouth, the record smallmouth fell for a spinnerbait.

Babbitt, who has caught and released several other large smallmouths in the Flathead, believes there are other record fish in the river. "I broke off a bigger one on 12-pound test last year," he says.

Both species of bass are known for their fighting qualities and aerial acrobatics. Introduced to Montana years ago from states farther east, largemouths do best in mud-bottomed lakes with comparatively warm summer water temperatures, while smallmouths favor cooler streams and lakes.

Ashley Lake near Kalispell was the scene of an epic battle through the ice in February 1999 as **FRANK GAMMA** of Kila subdued a state record pygmy whitefish. As its name implies, the pygmy whitefish is a pint-sized relative of the more common mountain whitefish, and Gamma's record specimen nudged the needle at only 0.18 pounds. But it turned out to be the heaviest pygmy whitefish registered in Montana in 17 years. Gamma, who often ice fishes for salmon at Ashley Lake, says he has caught lots of pygmy whitefish in the 4- to 6-inch range. But this fish measured 8 inches, prompting him to call the FWP office in Kalispell to ask about the existing record. He was told he should probably have it weighed, and he's glad he did.

Eureka angler **ANGELA PRICE** added her name to the records list with a 0.74-pound peamouth caught at Noxon Rapids Reservoir on May 30, 1999. Price's fish bested the previous record of 0.64 pounds set at Ashley Creek in 1991. According to *A Field Guide to Montana Fishes*, by George D. Holton and Howard E. Johnson, the peamouth is a native fish found only west of the Continental Divide in northwestern Montana.

The fifth and final record for 1999--a 6.03-pound Kokanee salmon from Hauser Reservoir near Helena--was set by another western Montana angler, **BRUCE ELLIOTT** of Missoula. Elliott's fish edged out the previous record

Kokanee from Pishkun Reservoir that had set the standard for 23 years. The Kokanee is a Pacific salmon that has been stocked in numerous locations throughout the state.

Other large fish of note taken in 1999, although not state records, included a 26.5-pound channel catfish from Fort Peck Lake caught by Tracy Downey of Bozeman, and a 19-pound brook trout-lake trout hybrid taken by Butte angler Marty Henderson at Georgetown Lake. The latter fish, although not eligible for the records list due to its hybrid status, is believed to be the biggest fish ever taken from Georgetown Lake.



What should you do if you think you've caught a record fish? You must have it weighed before witnesses on a government inspected scale like those found in most grocery stores, and you need to fill out a record fish report, available from any FWP office. An FWP employee must positively identify the fish, either through direct examination or with help of a good color photo. Direct examination is preferable, because in some cases a photo will not suffice to verify the species.

—Dave Books